HERPETOLOGICAL 'FOREIGNERS' ON NORFOLK ISLAND, AN EXTERNAL TERRITORY OF AUSTRALIA. *Memoirs of the Queensland Museum 46(2): 408. 2001:-* 'Biotas of islands, especially oceanic islands, characteristically differ from continental biotas in four ways. They are relatively impoverished, unsaturated, and disharmonic, and they harbor a disproportionately high number of endemic species. This last trait – high endemism – means that island species are crucially important to global biodiversity, while the first 3 traits are often seen as causing island species and communities to be particularly fragile. This is the island dilemma – great biodiversity, much of it not found elsewhere, but great danger' (Simberloff, 2000). The Norfolk group (29°02'S 167°57'E) is a volcanic and sedimentary island cluster 1,367km east of Australia, 772km northeast of New Zealand and 675km south of New Caledonia (Schodde et al., 1983). The extant and extinct biotas of these islands are highly endemic and, predictably, have affinities with those from Australia, New Zealand and New Caledonia/the tropical Pacific (Holloway, 1977; Cogger et al., 1983; Schodde et al., 1983).

Reptiles are scant on the Norfolk group. Two species – a gecko, *Christinus guentheri* (Boulenger, 1885) and a skink, *Oligosoma lichenigera* (O'Shaughnessy, 1874) – occur there. Populations referred to these species occur also on the Lord Howe I group, 900km to the east. Whether these taxa are conspecific with the Norfolk populations is uncertain. Norfolk and Lord Howe populations are known to be distinct to 'some degree' (Cogger et al., 1993). Neither *C. guentheri* nor *O. lichenigera* occurs on the main island (Norfolk) in the former group, although *C. guentheri* is reported from Holocene deposits there (Cogger et al., 1983). In the Norfolk group, *C.guentheri* occurs on Phillip I., Nepean I., Moo'oo Rock and Bird Rock. *O. lichenigera* is known from only Phillip I. Both species are reputed to have 'disappeared' from Norfolk I. due, largely, to the introduction (by Polynesian colonists some 900 y bp) of *Rattus exulans*. Reputed declines of populations of both species on Phillip I. have been attributed to massive habitat destruction there, by introduced rabbits, pigs and goats (Cogger et al., 1993). Both *C. guentheri* and *O. lighenigera* are classed 'endangered' (Cogger et al., 1993). Should the Norfolk group populations prove to be distinct from those on the Lord Howe group, the already narrow occurrences of each will be halved and their vulnerability to extinction will increase concomitantly. Frogs and other amphibians are unknown in both fossil and modern records for all islands in the Norfolk group.

Given the uniqeness of the Norfolk group's biota and its high vulnerability to further population declines and extinction, we report a series of reptile and amphibian specimens recently introduced to the main island of the Norfolk group. Specimens of 3 coloniser species have been found either on the island or in cargo for the island on a vessel anchored there, since 1998:

Bufo marinus (Linnaeus, 1754), Cane Toad QMJ74062 ♀; near the Colonial Hotel, Burnt Pine, Norfolk I.; Neil Tavener, mid 1999. This specimen was collected following its sighting by hotel staff and by a visitor from Cairns, NEQ

Litoria caerulea (White, 1790) Green Tree Frog, QM J74063, near watertank by workshops, Norfolk I. airport, Charles Buffet, 18 Nov. 1999; QMJ74064 'Pot Pourri' shop, Burnt Pine, Norfolk I., Joan Kenny, early 1998; QMJ74065 in pallet of airfreight from Brisbane, SEQ, Norfolk I., ca 1998.

Hemidactylus frenatus Duméril & Bibron, 1836, QMJ74060 Norfolk I., on a drum of telephone cable imported to the island from Australia, via Yamba, ca June 2000, Glen Williams and Tony Grant, 13 Sept., 2000. QMJ74061, amongst timber on board MV *Southern Moana* anchored at Norfolk I. to discharge cargo, Neil Tavener, early 2000. MV *Southern Moana* serves Auckland, Norfolk I., Raratonga, (Cook Islands) and, occasionally, docks in Aitutaki (Cook Islands) and Nuie Island. These are the first specimens of herptiles foreign to the Norfolk I. group to be recorded there. Cogger et al. (1983) conducted detailed herpetological surveys on all islands in the group and reported the presence of only *C. guentheri* and *O. lichenigera*. Since that time, no other herpetological specimens from the Norfolk group have been added to the collections of the Australian Museum, Sydney (R. Sadlier, pers. comm.).

B. marinus, *L. caerulea* and *H. frenatus* are aggressive and highly successful colonisers elsewhere. *B. marinus*, introduced to a handful of sugar cane-growing districts in coastal Queensland between 1935 and 1938, now occurs from the Mann R., NT, to northeastern New South Wales (Covacevich & Archer, 1975; R. Alford, pers. comm., October, 2000). *L. caerulea* is native to, common, and widespread in northern and eastern Australia. It adapts exceptionally well to urban areas and to agricultural and grazing lands and is known to travel easily with produce and building material. *H. frenatus* is a recent, very successful coloniser of Australia. It is presumed to have entered Australia with cargoes from ports in Asia and/or the Pacific Islands. Specimens were observed in Australia first in Darwin in 1964, but *H. frenatus* is believed to have entered Australia before then, Horner, pers. comm; 2000; Wilson, 2000. *H. frenatus* is now widely distributed in and near Queensland ports from Cooktown to the Gold Coast (Queensland Museum records) and has been reported recently from Adelaide, SA (M. Hutchinson, pers. comm., September, 2000). In Brishane, SEQ, *H. frenatus* has been extraordinarily successful. Earliest Brisbane specimens were collected on the wharves in 1983 (QMJ41978). This species is now probably the most common gecko in Brisbane, having moved from wharves, to inner city buildings and parks, to suburban homes/gardens with what appears to be astonishing success.

Discovery of specimens of these 3 species on the Norfolk group has implications for its future. All are highly successful in new, especially disturbed, habitats; thrive in the subtropics; and, if they gain even a tiny 'foothold' on the island/s, will become conspicuous elements of the Norfolk fauna, already dominated by species introduced by Europeans; one species (*H. frenatus*) may have the potential to 'out compete' the gecko (*C. guentheri*) endemic to the group; and two species (*B. marinus*, *L. caerulea*) will fill the present vacant amphibian/riparian niche on Norfolk I. on a massive scale.

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